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Presidential Documents

Title 3—

The President

Proclamation 6232 of November 15, 1990

National Federation of the Blind Day, 1990

By the President of the United States of America

A Proclamation

Since its founding half a century ago, the National Federation of the Blind has been a leading advocate for Americans affected by severe visual loss. Its administrators, staff, and supporters know that persons who are blind possess not only the desire but also the ability to lead full, independent, and productive lives, and they have encouraged all Americans to recognize this fact as well.

Through an effective community outreach program, the Federation has been working to enhance the public image of blind Americans and to promote real equality of opportunity for these members of our society. This outreach program includes television and radio appearances by Federation members, public presentations, and the distribution of educational materials. In addition, the Federation produces monthly and quarterly publications that serve as a valuable source of news and information on issues affecting Americans with impaired eyesight.

If the United States is to remain a strong and prosperous country, one that is competitive in the rapidly changing global marketplace, we must utilize the talent, creativity, and skill of all our citizens. Helping more blind Americans to enter this country's social and economic mainstream is, therefore, not only a moral imperative but also a wise investment in our Nation's future. On July 26, I was pleased to sign into law the Americans with Disabilities Act of 1990. The world's first comprehensive declaration of equality for persons with disabilities, this legislation prohibits employers covered by the Act from discriminating against qualified applicants or employees on the basis of a disability; it guarantees persons with disabilities access to public accommodations, such as offices, hotels, and shopping centers; and it calls for improved access to transportation, State and local government services, and telecommunications as well. This legislation—like the efforts of the National Federation of the Blind—reflects our commitment to ensuring equality of opportunity for all Americans.

In recognition of the Federation and its outstanding work, the Congress, by House Joint Resolution 667, has designated November 16, 1990, as "National Federation of the Blind Day" and has authorized and requested the President to issue a proclamation in observance of that day.

NOW, THEREFORE, I, GEORGE BUSH, President of the United States of America, do hereby proclaim November 16, 1990, as National Federation of the Blind Day. I encourage all Americans to observe this day through appropriate programs and activities that reaffirm our appreciation of the rights needs, and abilities of persons who are blind.

IN WITNESS WHEREOF, I have hereunto set my hand this fifteenth day of November, in the year of our Lord nineteen hundred and ninety, and of the Independence of the United States of America the two hundred and fifteenth.

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Rules and Regulations

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Vol. 55, No. 224

Tuesday, November 20, 1990

DEPARTMENT OF ENERGY

Office of Conservation and Renewable Energy

10 CFR Part 436

[Docket No. CAS-RM-79-107]

Federal Energy Management and Planning Programs; Life Cycle Cost Methodology and Procedures

AGENCY: Office of Conservation and Renewable Energy, DOE.

ACTION: Notice of final rulemaking.

SUMMARY: The Department of Energy today gives notice of final amendments to 10 CFR part 436 to update the guidelines applicable to Federal agency in-house energy management programs. The principal purpose of this rulemaking is to make changes in the guidelines to conform to the provisions of the Federal Energy Management Improvement Act of 1988 (Pub. L. 100-615). The changes made final today mainly involve amendments to the life cycle cost methodology and procedures to provide for an annually determined, market-based discount rate and for a more effective system to revise annually the energy cost escalation rates Federal agencies are required to assume.

EFFECTIVE DATE: December 20, 1990.

FOR FURTHER INFORMATION CONTACT:

K. Dean DeVine, P.E., Federal Energy Management Program, CE-44, Office of Conservation and Renewable Energy, U.S. Department of Energy, 1000 Independence Avenue SW., Washington, DC 20585, (202) 586-6784.

Neal J. Strauss, Office of General Counsel, Conservation and Regulations, GC-12, U.S. Department of Energy, 1000 Independence Avenue, SW., Washington, DC 20585, (202) 586-9507.

SUPPLEMENTARY INFORMATION:

I. Introduction

The Department of Energy (DOE) today publishes final amendments to some of the rules in 10 CFR part 436 which are applicable to programs for the management of energy consumption by Federal agencies. The amendments are directed principally toward updating the life cycle cost methodology and procedures in subpart A of 10 CFR part 436 in light of provisions in the Federal Energy Management Improvement Act of 1988 (FEMIA) granting DOE more discretion in setting discount and energy cost escalation rates, and of ten years of experience under the existing rule (Pub. L. 100-615). These amendments will promote improved energy cost efficiency in: (1) The design of new Federal buildings, and the application of energy conservation measures to existing Federal buildings, (2) leasing of buildings for Federal use, and (3) construction of buildings, structures and facilities in all segments of the economy. Secondarily, the amendments also are designed to make necessary revisions to other subparts of part 436 to take account of the execution of some provisions of section 10 of Executive Order 11912, as amended by Executive Order 12003, 42 FR 37523 (July 20, 1977) related to Fiscal Year 1985 building energy reduction goals and the expiration of part II of title V of the National Energy Conservation Policy Act (NECPA), Public Law 95-619, which provided for the Solar in Federal Buildings Demonstration Program.

The proposed version of today's amendments was noticed for public comment at 55 FR 2590 (January 25, 1990). Further details with regard to the background of this rulemaking may be found in the supplementary information portion of the January 25 notice of proposed rulemaking.

DOE received one comment from the Natural Resources Defense Council (NRDC) which is addressed in detail below. Except for the changes made in response to the NRDC comment, and one technical change to § 436.10, Purpose, there are no substantial differences between the proposed and final amendments.

The proposed version of today's amendments stated that the purpose of the life cycle costing methodology is attainment of the 10 percent Btu per gross square foot 1995 reduction goal. That statement was too narrow. As a technical change to conform the rule more precisely to NECPA's stated purpose for the life cycle costing methodology as revised by FEMIA (Pub. L. 100-615), DOE has revised § 436.10 to state that the purpose of subpart A is to provide the life cycle cost methods and procedures to be used for the design of new Federal buildings and the application of energy conservation measures to existing buildings. 42 U.S.C. 8254(b).

In developing the amendments which are finalized today, DOE actively consulted with the Office of Management and Budget (OMB), the Department of Defense (DOD), and the General Services Administration (GSA). DOE received substantial assistance from the National Institute of Standards and Technology (NIST).

II. Discussion of Comments

A. Discount Rate Selection Method

In general, the NRDC agrees with DOE that measuring the interest rate on U.S. Treasury bonds and removing the effects of inflation is the appropriate procedure for setting a market-based discount rate to be used in performing life cycle cost analyses for purposes of estimating and comparing the cost effects of investing in greater energy efficiency in Federal buildings. However, for a variety of reasons, the NRDC takes issue with the proposed use of the inflation projections of the President's Council of Economic Advisers, arguing instead for use of long-term averages of past rates of inflation. The NRDC also criticizes the use of current market interest rates for long-term U.S. Treasury bonds and argues instead for historic averages of long-term U.S. Treasury bond rates. The NRDC expressed concern about a potential for extreme fluctuations which might result in some energy conservation measures being included one quarter and others with the same characteristics being excluded the very next quarter. Finally, the NRDC contends that long-term real discount rates are desirable because they tend to offset a bias toward supply-side resources resulting from the effects of taxes and inflation.

Inflation Projections v. Long-Term Averages of Past Inflation Rates

The NRDC's chief objections to the proposed use of the inflation projections of the President's Council of Economic Advisers are that: (1) Inflation may not be the same as projected; and (2) the projections are biased toward the "lower end of the credible range of inflation." NRDC Comment, p. 3. Their chief arguments in favor of using long-term averages of past inflation rates are: (1) Greater reliability; (2) variations in inflation are not important unless they persist over a long period of time; and (3) greater objectivity.

While the inflation projections of the President's Council of Economic Advisers may not be precisely predictive of the actual rate of inflation for any given year, long-term averages of past inflation rates are not infallibly predictive either. Long-term averages of past rates are insensitive to changes in current market conditions. Consequently, from time to time, the discrepancy between the long-term average of past inflation rates and actual inflation for any given year is going to be larger, perhaps considerably larger, than the discrepancy between the inflation projections of the President's Council of Economic Advisers and actual inflation.

Although recognizing that such a discrepancy might occur from time to time, the NRDC downplays its significance, and argues that, over the long term, discrepancies of this nature will even out and the program as a whole will be cost effective over that term. It is unclear what the NRDC means precisely by long term. (At some points in its comments, the NRDC seems to argue in favor of a 50-year or even a 100-year time frame.) But even assuming for the sake of argument that the long term is 25 or 30 years, and accepting that long run averages are more objective because some subjective policy considerations are screened out, the danger of distortion over the short and intermediate term, stemming from rigid adherence to long run averages, is not worth incurring when, as the NRDC itself has pointed out, the inflation projections of the President's Council of Economic Advisers are within the "credible range of inflation."

In general, if market conditions change significantly, those changes should be reflected to a reasonable extent in the results of life cycle cost analyses conducted by Federal agencies. Use of the inflation projections of the President's Council of Economic Advisers rather than long run averages of past rates is consistent with that policy preference.

Avoidance of Extreme Fluctuations

In arguing against reliance on current market interest rates for long-term U.S. Treasury bonds and projected inflation rates, the NRDC contends that such reliance could result in inappropriate quarterly changes in the list of energy conservation measures which are cost-justified. This contention apparently reflects a misreading of the Notice of Proposed Rulemaking. As proposed, the discount rate would be established at the beginning of each fiscal year and would not change over the year. Consequently, there would be no quarterly variations.

Nevertheless, the NRDC comment caused DOE to reexamine the proposed rule to determine whether additional modifications were warranted to avoid extreme fluctuations on a year-to-year basis. While DOE wants the real discount rate to be responsive to market conditions, DOE agrees with the NRDC that extreme fluctuations would be disruptive.

To avoid such fluctuations, DOE has modified the proposed rule to lengthen the period of time over which long-term U.S. Treasury bond rates are to be averaged from the most recent three months, prior to the cut-off date for preparing the annual supplement to the Life Cycle Cost Manual for the Federal Energy Management Program (NIST 85-3273), to the entire year preceding. The effect of this modification will be to avoid seasonal fluctuations in the current long-term bond rate.

As a further modification to avoid extreme fluctuations, DOE has altered the proposed rule to provide for a ceiling and a floor on the real discount rate. In the Notice of Proposed Rulemaking, DOE described an adjustment procedure to account for the fact that the Council of Economic Advisors inflation projection is for a five-year period, while the U.S. Treasury bond maturity is 10 years and longer. DOE today modifies the proposed rule by imposing a ceiling set at the real discount rate prescribed by the Office of Management and Budget in its Circular A-94, "Discount Rates to be Used in Evaluating Time-Distributed Costs and Benefits." The effect of this ceiling would be to avoid a discount rate for energy efficiency and renewable energy projects higher than the discount rate applicable to most other capital-intensive Federal projects. The floor is at 3 percent (real), the approximate average of long-term real rates of return in the U.S. The effect of this floor is to avoid negligible or negative discount rates.

Offsetting the Alleged Bias for Supply-Side Resources

In arguing for use of long-term real discount rates, the NRDC points out that one of the effects of using such rates is to counteract the alleged bias in favor of supply technologies with high capital costs, such as nuclear power and offshore oil drilling. This alleged bias is reflected in relatively low implicit discount rates for such projects which are cited by the NRDC but for which no source is given. Although the NRDC does not explain precisely what accounts for the relatively low implicit discount rates, part of the explanation seems to be tax policies to which the NRDC objects.

For a variety of reasons, DOE does not think that the alleged bias to which the NRDC points is a persuasive reason for using long-term averages of past real discount rates. First, setting a real discount rate involves accounting for the time value of money, and the alleged bias is irrelevant to that task. Second, DOE does not think that it is appropriate to use the discretion given by Congress to set a discount rate in order to counteract tax policy that has been enacted into law. Third, it is very unlikely that any investment decision in the Federal Energy Management Program, as currently authorized, will involve a proposal or proposals to which the alleged bias would apply.

B. Study Period

The NRDC criticizes the 25-year limit on analysis period on the ground that it is arbitrary to limit the life of buildings for purposes of analysis to 25 years. This criticism ignores section 544(a)(1) of NECPA which compels DOE to use 25 years as the outside limit on the analysis period. DOE also doubts the desirability of extending the period from 25 to 50 or more years, as the NRDC recommends, because: (1) There is no reliable method of forecasting energy price escalation beyond 25 years; (2) estimates of cash flows that far out in time are likely to be too speculative; and (3) the effect of discounting makes estimated cash flows beyond 25 years relatively insignificant.

C. Presumptions

The NRDC also argues for modification of the provisions of 10 CFR 436.13(b) which provides, in certain circumstances, that a Federal agency may presume that an investment in an energy conservation measure to retrofit a Federal building would not be life cycle cost effective if the building is occupied under a short-term lease or if it is scheduled for demolition or retirement from service within three years. The NRDC contends that the provisions in question are too broad because many retrofits pay back in one year or less. DOE agrees and in today's notice modifies 10 CFR 436.13 (b)(1) and (b)(3) by narrowing the scope of the permissible presumption. Under the modified provisions, the presumption could be applied only if the remaining time period with respect to a short-term lease or with respect to an owned building scheduled for demolition or retirement from service is one year or less.

D. External Cost Effects

The NRDC insists that DOE include the external benefits of saving energy in the life cycle cost methodology. Among the external benefits the NRDC seems to think should be included are enhanced national security from oil import avoidance and reduced air pollution from compounds of sulfur and oxygen and of nitrogen and oxygen, as well as from "global greenhouse gas emissions."

No specifics are offered by the NRDC as to how to attach a dollar value to these external benefits. NRDC also did not comment with regard to the proposed revision of 10 CFR 436.14(f) to delete the requirement for Federal agencies to assume for purposes of a life cycle cost analysis that investment costs are 90 percent of actual investment costs. That requirement was an adjustment to reflect external cost benefits, and was originally modeled on the 10 percent Federal energy tax credit which has expired. See 45 FR 5620, 5621 (January 23, 1980).

In arguing for inclusion of external benefits, the NRDC referred to what it described as "the clear purpose of the Energy Policy and Conservation Act **** to reduce energy consumption below the levels that were being provided by market forces." The NRDC concluded: "The clear economic concept behind such a goal is that energy has a societal value in excess of its market value." Neither the text of the Energy Policy and Conservation Act (Pub. L. 94-385) nor any authoritative portion of its legislative history is cited in support of these assertions generally or with respect to life cycle cost analyses in particular. NRDC Comment, p. 9.

Historically, part of the authority for subpart A of 10 CFR part 436 has been section 381 of the Energy Policy and Conservation Act, 42 U.S.C. 6361, as implemented by Executive Order 11912, as amended. However, neither section 381 nor its specific legislative history supports the NRDC assertions. The principal authority for Subpart A has been and continues to be NECPA, and the text and related legislative history of NECPA (discussed below) are the relevant indications of legislative intent with regard to particular issues regarding the life cycle cost methodology and procedures including the issue of accounting for external benefits.

The NRDC also referred to "numerous policy statements over the last seventeen years," as well as programs and tax law provisions allegedly aimed at reducing oil imports. Based on those alleged statements, programs, and provisions of law, the NRDC argues in substance that maintenance of consistency and credibility in national energy policy warrants inclusion of external benefits in the life cycle cost methodology for Federal buildings. While the NRDC is specific in identifying some of the programs (*e.g.*, the Strategic Petroleum Reserve) and the tax law provisions (tax incentives for oil exploration or extraction) on which it relies, there is no specific reference to any particular policy statement.

Given that the Federal Energy Management Program involves public expenditures which have benefits in reducing the need for expenditures in other programs, DOE has always been receptive to the idea of including external benefits in the life cycle cost methodology and procedures so long as the method for doing so met the statutory requirement (now set forth in section 544(a)(1) of NECPA) of being "practical and effective." See also section 545(a)(1) of Public Law 95-619. This first attempt to include external benefits was the 10 percent off of actual investment costs reflected in 10 CFR 436.14(f).

The basis for the 10 percent credit reflected in the investment cost assumption required by 10 CFR 436.14(f), and deleted today, was always somewhat slender, and it eroded substantially with the expiration of energy tax credits in 1985. Moreover, that assumption appears to have contributed to a lack of credibility for the life cycle cost analysis results with some officials of the Executive Branch involved in formulating the President's annual budget request and with some Senators and Representatives on appropriating committees who want measures of cost effectiveness which substantially reflect the estimated cost effects over relevant time periods that are readily measurable in dollars. Including a measure of external cost effects, which at best was a rough approximation, without much empirical basis, seems to have contributed to a tendency to disregard the raw data results of life cycle cost analyses under 10 CFR part 436 in the energy policy decisions that really count, the decisions to seek and to provide budgetary resources for investments in increased energy efficiency.

In 1980, apparently dissatisfied with DOE efforts to resolve several issues with regard to the life cycle cost methodology and procedures, such as a procedure for estimating external benefits, more appropriate than the procedure in 10 CFR 436.14(b), Congress passed the Energy Security Act (Public Law 96-294). Section 405 of that Act amended NECPA to specify that, in establishing life cycle cost methods, the Secretary must use "marginal fuel costs." That term was not defined in the statute, but the Joint Explanatory Statement of the Committee of Conference said: "The Conferees intend that 'marginal fuel costs' are the marginal costs which a customer would pay for fuel or energy available in the region of the country where the Federal building is located." 1980 U.S. Code Congressional and Administrative News, 2077, 2171.

During the 1980's, DOE sought to comply with the above-quoted Congressional guidance which was interpreted as the legislatively preferred approach for inclusion of external benefits in the life cycle cost methodology. At the outset, by an advance notice of proposed rulemaking, DOE invited the public to respond to some tentative thinking by DOE's Energy Information Administration about setting marginal fuel costs including an oil import premium, and to make suggestions as how to proceed toward a notice of proposed rulemaking. 45 FR 66620 (October 7, 1980). DOE did not receive any useful public response to that advance notice. Repeated efforts to develop a notice of proposed rulemaking failed because DOE was unable to develop marginal price projections which appeared rational and had a sufficient rational basis to warrant proposal for public comment.

As indicated above, experience with the budget and appropriation process revealed that within the Executive Branch and the Congress the life cycle cost results produced in accordance with DOE's existing methodology were diluted or disregarded. The credibility of those results became an increasingly serious policy concern for DOE and the other Federal agencies. That concern, together with the problems encountered in projecting marginal fuel costs, led to the conclusion that reflecting external benefits in the life cycle cost methodology was neither "practical" nor "effective". Accordingly, the Administration did not object to statutory amendments to NECPA in FEMIA substituting a requirement for use of average fuel costs for the previous requirement for marginal fuel costs.

While the change in law does not necessarily bar inclusion of external benefits in the life cycle cost methodology and procedures in some form other than marginal fuel costs, it does suggest that the inclusion of such benefits is not mandatory. In the absence of any credible way of projecting such benefits, DOE must reject the NRDC insistence that the methodology be amended to account for them. However, in rejecting the NRDC's viewpoint on external benefits, DOE is not saying that external benefits should not affect decisions related to the Federal Energy Management Program. Those kind of benefits should be taken into account, in addition to the results of life cycle cost analyses, in the formulation of a budget request, in legislating appropriations, and in the drafting of new laws which affect Federal energy consumption.

DOE believes that the methodology and procedures, as amended today, will yield life cycle cost analyses with results which will represent a more credible and compelling argument for greater investment in increased energy efficiency in the Federal sector than the analyses produced in the past.

III. Review Under Executive Order 12291

Today's regulatory amendments were reviewed under Executive Order 12291. DOE has concluded that the rule is not a "major rule" because it will not result in: (1) An annual effect on the economy of $100 million of more; (2) a major increase in costs or prices for consumers, individual industries, Federal, State, or local government agencies or geographic regions; or (3) significant adverse effects on competition, employment, investment, productivity, innovation, or on the ability of the United States-based enterprises to compete in domestic export markets. In accordance with the requirements of Executive Order 12291, the notice has been reviewed by OMB.

IV. Review Under the Regulatory Flexibility Act

These regulatory amendments were reviewed under the Regulatory Flexibility Act, 5 U.S.C. 601–612, which requires preparation of a regulatory flexibility analysis for any regulation that will have a significant economic impact on a substantial number of small entities, *i.e.*, small businesses and small government jurisdictions. DOE has certified that these regulatory amendments will not have such an impact.

V. Review Under Executive Order 12612

Executive Order 12612 requires that rules be reviewed for Federalism effects on the institutional interests of States and local governments and, if the effects are sufficiently substantial, preparation of a Federalism Assessment is required to assist senior policymakers. This rulemaking will not have any substantial direct effects on State and local governments. The final amendments will affect Federal agency buildings and operations regarding activities which are not subject to direct State regulation.

VI. Environmental Review

The life cycle costing methodology is used only to make decisions on the cost effective utilization of energy generally and on cost effective measures to reduce non-renewable energy consumption. DOE has determined that the incremental changes made in the methodology by today's rule are not a major Federal action significantly affecting the quality of the human environment within the meaning of the National Environmental Policy Act of 1969. Consequently, neither an Environmental Impact Statement nor an Environmental Assessment is required for the final rule.

List of Subjects in 10 CFR Part 436

Energy conservation, Federal buildings and facilities, Renewable energy resources, Reporting and recordkeeping requirements.

Issued in Washington, DC, October 16, 1990.

J. Michael Davis,
Assistant Secretary, Conservation and Renewable Energy.

PART 436—[AMENDED]

10 CFR part 436 is amended as follows:

1. The authority citation for 10 CFR part 436 is revised to read as follows:

Authority: Energy Policy and Conservation Act, as amended, 42 U.S.C. 6361; Executive Order 11912, as amended, 42 FR 37523 (July 20, 1977); National Energy Conservation Policy Act, Title V, Part 3, as amended. 42 U.S.C. 8251–8261.

2. Sections 436.1 and 436.2 are revised to read as follows:

§ 436.1 Scope.

This part sets forth the rules for Federal energy management and planning programs to reduce Federal energy consumption and to promote life cycle cost effective investments in building energy systems and energy conservation measures for Federal building.

§ 436.2 General objectives.

The objectives of Federal energy management and planning programs are:

(a) To apply energy conservation measures to, and improve the design for construction of Federal buildings such that the energy consumption per gross square foot of Federal buildings in use during the fiscal year 1995 is at least 10 percent less than the energy consumption per gross square foot in 1985;

(b) To promote the methodology and procedures for conducting life cycle cost analyses of proposed investments in building energy systems and energy conservation measures; and

(c) To promote efficient use of energy in all agency operations through general operations plans.

3. 10 CFR part 436 is amended by revising subpart A as follows:

Subpart A—Methodology and Procedures for Life Cycle Cost Analyses

Subpart A—Methodology and Procedures for Life Cycle Cost Analyses

§ 436.10 Purpose.

This subpart establishes a methodology and procedures for estimating and comparing the life cycle costs of Federal buildings, for determining the life cycle cost effectiveness of energy conservation measures, and for rank ordering life cycle cost effective energy conservation measures in order to design a new Federal building or to retrofit an existing Federal building.

§ 436.11 Definitions.

As used in this subpart—

Base Year means the fiscal year in which a life cycle cost analysis is conducted.

Building energy system means an energy conservation measure or any portion of the structure of a building or any mechanical, electrical, or other functional system supporting the building, the nature or selection of which for a new building influences significantly the cost of energy consumed.

Component price means any variable sub-element of the total charge for a fuel or energy, including but not limited to such charges as "demand charges," "off-peak charges" and "seasonal charges."

Demand charge means that portion of the charge for electric service based upon the plant and equipment costs associated with supplying the electricity consumed.

DOE means Department of Energy.

Energy conservation measures means measures that are applied to an existing Federal building that improve energy efficiency and are life cycle cost effective and that involve energy conservation, cogeneration facilities, renewable energy sources, improvements in operation and maintenance efficiencies, or retrofit activities.

Federal agency means "agency" as defined by 5 U.S.C. 551(1).

Federal building means an energy conservation measure or any building, structure, or facility, or part thereof, including the associated energy consuming support systems, which is constructed, renovated, leased, or purchased in whole or in part for use by the Federal Government and which consumes energy. Such term also means a collection of such buildings, structures, or facilities and the energy consuming support systems for such collection.

Investment costs means the initial costs of design, engineering, purchase, construction, and installation exclusive of sunk costs.

Life Cycle Cost means the total cost of owning, operating and maintaining a building over its useful life (including its fuel, energy, labor, and replacement components), determined on the basis of a systematic evaluation and comparison of alternative building systems, except that in the case of leased buildings, the life cycle cost shall be calculated over the effective remaining term of the lease.

Non-recurring costs means costs that are not uniformly incurred annually over the study period.

Non-fuel operation and maintenance costs means material and labor cost for routine upkeep, repair and operation exclusive of energy cost.

Recurring costs means future costs that are incurred uniformly and annually over the study period.

Replacement costs means future cost to replace a building energy system, energy conservation measure, or any component thereof.

Retrofit means installation of a building energy system alternative in an existing Federal building.

Salvage value means the value of any building energy system removed or replaced during the study period, or recovered through resale or remaining at the end of the study period.

Study period means the time period covered by a life cycle cost analysis.

Sunk costs means costs incurred prior to the time at which the life cycle cost analysis occurs.

Time-of-day rate means the charge for service during periods of the day based on the cost of supplying services during various times of the day.

§ 436.12 Life cycle cost methodology.

The life cycle cost methodology for this part is a systematic analysis of relevant costs, excluding sunk costs, over a study period, relating initial costs to future costs by the technique of discounting future costs to present values.

§ 436.13 Presuming cost-effectiveness results.

(a) If the investment and other costs for an energy conservation measure considered for retrofit to an existing Federal building or a building energy system considered for incorporation into a new building design are insignificant, a Federal agency may presume that such a system is life cycle cost-effective without further analysis.

(b) A Federal agency may presume that an investment in an energy conservation measure retrofit to an existing Federal building is not life cycle cost-effective if the Federal building is—

(1) Occupied under a short-term lease with a remaining term of one year or less, and without a renewal option or with a renewal option which is not likely to be exercised;

(2) Occupied under a lease which includes the cost of utilities in the rent and does not provide a pass through of energy savings to the government; or

(3) Scheduled to be demolished or retired from service within one year or less.

§ 436.14 Methodological assumptions.

(a) Each Federal Agency shall discount to present values the future cash flows established in either current or constant dollars consistent with the nominal or real discount rate, and related tables, published in the annual supplement to the Life Cycle Costing Manual for the Federal Energy Management Program (NIST 85–3273) and determined annually by DOE as follows—

(1) The nominal discount rate shall be a 12 month average of the composite yields of all outstanding U.S. Treasury bonds neither due nor callable in less than ten years, as most recently reported by the Federal Reserve Board; and

(2) Subject to a ceiling of 10 percent and a floor of three percent the real discount rate shall be a 12 month average of the composite yields of all outstanding U.S. Treasury bonds neither due nor callable in less than ten years, as most recently reported by the Federal Reserve Board, adjusted to exclude estimated increases in the general level of prices consistent with projections of inflation in the most recent Economic Report of the President's Council of Economic Advisors.

(b) Each Federal agency shall assume that energy prices will change at rates projected by DOE's Energy Information Administration and published by NIST annually no later than the beginning of the fiscal year in the Annual Supplement to the Life Cycle Costing Manual for the Federal Energy Management Program, in tables consistent with the discount rate determined by DOE under paragraph (a) of this section, except that—

(1) If the Federal agency is using component prices under § 436.14(c), that agency may use corresponding component escalation rates provided by the energy supplier.

(2) For Federal buildings in foreign countries, the Federal agency may use a "reasonable" escalation rate.

(c) Each Federal agency shall assume that the price of energy in the base year is the actual price charged for energy delivered to the Federal building and may use actual component prices as provided by the energy supplier.

(d) Each Federal agency shall assume that the appropriate study period is as follows:

(1) For evaluating and ranking alternative retrofits for an existing Federal building, the study period is the expected life of the retrofit, or 25 years from the beginning of beneficial use, whichever is shorter.

(2) For determining the life cycle costs or net savings of mutually exclusive alternatives for a given building energy system (e.g., alternative designs for a particular system or size of a new or retrofit building energy system), a uniform study period for all alternatives shall be assumed which is equal to—

(i) The estimated life of the mutually exclusive alternative having the longest life, not to exceed 25 years from the beginning of beneficial use with appropriate replacement and salvage values for each of the other alternatives; or

(ii) The lowest common multiple of the expected lives of the alternative, not to exceed 25 from the beginning of beneficial use with appropriate replacement and salvage values for each alternative.

(3) For evaluating alternative designs for a new Federal building, the study period extends from the base year through the expected life of the building or 25 years from the beginning of beneficial use, whichever is shorter.

(e) Each Federal agency shall assume that the expected life of any building energy system is the period of service without major renewal or overhaul, as estimated by a qualified engineer or architect, as appropriate, or any other reliable source except that the period of service of a building energy system shall not be deemed to exceed the expected life of the owned building, or the effective remaining term of the leased building (taking into account renewal options likely to be exercised).

(f) Each Federal agency may assume that investment costs are a lump sum occurring at the beginning of the base year, or may discount future investment costs to present value using the appropriate present worth factors under paragraph (a) of this section.

(g) Each Federal agency may assume that energy costs and non-fuel operation and maintenance costs begin to accrue at the beginning of the base year or when actually projected to occur.

(h) Each Federal agency may assume that costs occur in a lump sum at any time within the year in which they are incurred.

(i) This section shall not apply to calculations of estimated simple payback time under § 436.22 of this part.

§ 436.15 Formating cost data.

In establishing cost data under §§ 436.16 and 436.17 and measuring cost effectiveness by the modes of analysis described by § 436.19 through § 436.22, a format for accomplishing the analysis which includes all required input data and assumptions shall be used. Subject to § 436.18(b), Federal agencies are encouraged to use worksheets or computer software referenced in the Life Cycle Cost Manual for the Federal Energy Management Program.

§ 436.16 Establishing non-fuel cost categories.

(a) The relevant non-fuel cost categories are—

(1) Investment costs;

(2) Non-fuel operation and maintenance cost;

(3) Replacement cost; and

(4) Salvage value.

(b) The present value of recurring costs is the product of the base year value of recurring costs as multiplied by the appropriate uniform present worth factor under § 436.14, or as calculated by computer software indicated in § 436.18(b) and used with the official discount rate and escalation rate assumptions under § 436.14. When recurring costs begin to accrue at a later time, subtract the present value of recurring costs over the delay, calculated using the appropriate uniform present worth factor for the period of the delay, from the present value of recurring costs over the study period or, if using computer software, indicate a delayed beneficial occupancy date.

(c) The present value of non-recurring cost under § 436.16(a) is the product of the non-recurring costs as multiplied by appropriate single present worth factors under § 436.14 for the respective years in which the costs are expected to be incurred, or as calculated by computer software provided or approved by DOE and used with the official discount rate and escalation rate assumptions under § 436.14.

§ 436.17 Establishing energy cost data.

(a) Each Federal agency shall establish energy costs in the base year by multiplying the total units of energy used in the base year by the price per unit of energy in the base year as determined in accordance with § 436.14(c).

(b) When energy costs begin to accrue in the base year, the present value of energy costs over the study period is the product of energy costs in the base year as established under § 436.17(a), multiplied by the appropriate modified uniform present worth factor adjusted for energy price escalation for the applicable region, sector, fuel type, and study period consistent with § 436.14, or as calculated by computer software provided or approved by DOE and used with the official discount rate and escalation rate assumptions under § 436.14. When energy costs begin to accrue at a later time, subtract the present value of energy costs over the delay, calculated using the adjusted, modified uniform present worth factor for the period of delay, from the present value of energy costs over the study period or, if using computer software, indicate a delayed beneficial occupancy date.

§ 436.18 Measuring cost-effectiveness.

(a) In accordance with this section, each Federal agency shall measure cost-effectiveness by combining cost data established under §§ 436.16 and 436.17 in the appropriate mode of analysis as described in § 436.19 through § 436.22.

(b) Federal agencies performing LCC analysis on computers shall use either the Federal Buildings Life Cycle Costing (FBLCC) software provided by DOE or software consistent with this subpart.

(c) Replacement of a building energy system with an energy conservation measure by retrofit to an existing Federal building or by substitution in the design for a new Federal building shall be deemed cost-effective if—

(1) Life cycle costs, as described by § 436.19, are estimated to be lower; or

(2) Net savings, as described by § 436.20, are estimated to be positive; or

(3) The savings-to-investment ratio, as described by § 436.21, is estimated to be greater than one; or

(4) The adjusted internal rate of return, as described by § 436.22, is estimated to be greater than the discount rate as set by DOE.

(d) As a rough measure, each Federal agency may determine estimated simple payback time under § 436.23, which indicates whether a retrofit is likely to be cost-effective under one of the four calculation methods referenced in § 436.18(c). An energy conservation measure alternative is likely to be cost-effective if estimated payback time is significantly less than the useful life of that system, and of the Federal building in which it is to be installed.

(e) Mutually exclusive alternatives for a given building energy system, considered in determining such matters as the optimal size of a solar energy system, the optimal thickness of insulation, or the best choice of double-glazing or triple-glazing for windows, shall be compared and evaluated on the basis of life cycle costs or net savings over equivalent study periods. The alternative which is estimated to result in the lowest life cycle costs or the highest net savings shall be deemed the most cost-effective because it tends to minimize the life cycle cost of Federal building.

(f) When available appropriations will not permit all cost-effective energy conservation measures to be undertaken, they shall be ranked in descending order of their savings-to-investment ratios, or their adjusted internal rate of return, to establish priority. If available appropriations cannot be fully exhausted for a fiscal year by taking all budgeted energy conservation measures according to their rank, the set of energy conservation measures that will maximize net savings for available appropriations should be selected.

(g) Alternative building designs for new Federal buildings shall be evaluated on the basis of life cycle costs. The alternative design which results in the lowest life cycle costs for a given new building shall be deemed the most cost-effective.

§ 436.19 Life cycle costs.

Life cycle costs are the sum of the present values of—

(a) Investment costs, less salvage values at the end of the study period;

(b) Non-fuel operation and maintenance costs:

(c) Replacement costs less salvage costs of replaced building systems; and

(d) Energy costs.

§ 436.20 Net savings.

For a retrofit project, net savings may be found by subtracting life cycle costs based on the proposed project from life cycle costs based on not having it. For a new building design, net savings is the difference between the life cycle costs of an alternative design and the life cycle costs of the basic design.

§ 436.21 Savings-to-investment ratio.

The savings-to-investment ratio is the ratio of the present value savings to the present value costs of an energy conservation measure. The numerator of the ratio is the present value of net savings in energy and non-fuel operation and maintenance costs attributable to the proposed energy conservation measure. The denominator of the ratio is the present value of the net increase in investment and replacement costs less salvage value attributable to the proposed energy conservation measure.

§ 436.22 Adjusted internal rate of return.

The adjusted internal rate of return is the overall rate of return on an energy conservation measure. It is calculated by subtracting 1 from the Nth root of the ratio of the terminal value of savings to the present value of costs, where N is the number of years in the study period. The numerator of the ratio is calculated by using the discount rate to compound forward to the end of the study period the yearly net savings in energy and non-fuel operation and maintenance costs attributable to the proposed energy conservation measure. The denominator of the ratio is the present value of the net increase in investment and replacement costs less salvage value attributable to the proposed energy conservation measure.

§ 436.23 Estimated simple payback time.

The estimated simple payback time is the number of years required for the cumulative value of energy cost savings less future non-fuel costs to equal the investment costs of the building energy system, without consideration of future price changes or discount rates.

§ 436.24 Uncertainty analyses.

If particular items of cost data or timing of cash flows are uncertain and are not fixed under § 436.14, Federal agencies may examine the impact of uncertainty on the calculation of life cycle cost effectiveness or the assignment of rank order by conducting additional analyses using any standard engineering economics method such as sensitivity and probabilistic analysis. If additional analysis casts substantial doubt on the life cycle cost analysis results, a Federal agency should consider obtaining more reliable data or eliminating the building energy system alternative.

Appendix A to Subpart A and Subparts B, C, and D [Reserved]

4. 10 CFR part 436 is further amended by removing appendix A to subpart A, and by removing and reserving subparts B, C and D.

§ 436.100 [Amended]

5. 10 CFR part 436 is further amended by removing the last two sentences of § 436.100(a) and by revising § 436.100 (b) to read:

* * * * *

(b) *Scope.* This subpart applies to all general operations of Federal agencies and is applicable to management of all energy used by Federal agencies that is excluded from coverage pursuant to section 543(a)(2) of part 3 of title V of the National Energy Conservation Policy Act, as amended (42 U.S.C. 8251–8261).

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Parts 21 and 23

[Docket No. 061CE, Special Conditions No. 23-ACE-44A]

Special Conditions; Dornier SEASTAR Model CD2 Series Airplanes

AGENCY: Federal Aviation Administratioin (FAA), DOT.

ACTION: Final special conditions, amended.

SUMMARY: This rulemaking action amends final special conditions 23-ACE-44, for the Dornier SEASTAR Model CD2 series airplanes, which were published in the Federal Register October 25, 1989 (54 FR 43417). A notice proposing this amendment was published April 6, 1990 (55 FR 12857). These airplanes will have novel and unusual design features when compared to the state of technology envisaged in the applicable airworthiness standards for airplanes to be type certificated in the commuter category. The novel and unusual design features include operation from water for which the applicable regulations do not contain adequate or appropriate airworthiness standards. This amendment adopts additional airworthiness standards that the Administrator considers necessary to establish a level of safety equivalent to the airworthiness standards applicable to these airplanes.

EFFECTIVE DATE: December 20, 1990.

FOR FURTHER INFORMATION CONTACT: Norman R. Vetter, Aerospace Engineer, Standards Office (ACE-110), Small Airplane Directorate, Aircraft Certification Service, Federal Aviation Administration, room 1544, 601 East 12th Street, Kansas City, Missouri 64106; telephone (816) 426-5688.

Type Certification Basis

The type certification basis for the Dornier SEASTAR Model CD2 series airplane is as follows: Part 21 of the Federal Aviation Regulations (FAR), § 21.29; part 23 of the FAR, effective February 1, 1965, as amended by amendments 23–1 through 23–34; Special Federal Aviation Regulation (SFAR) No. 27, effective February 1, 1974, as amended by amendments 27–1 through 27–6; part 36 of the FAR, effective December 1, 1969, as amended by amendments 36–1 through the amendment effective on the date of type certification; exemptions, if any; special conditions 23-ACE-44 and 23-ACE-44A.

Background

On November 18, 1986, Claudius Dornier SEASTAR GmbH and Company made application for a type certificate through the Luftfahrt Bundesamt to the FAA Brussels Office for the SEASTAR Model CD2 airplane. At the time of application, commuter category airplane airworthiness standards were not incorporated into part 23 of the FAR. Certification for 12 passenger airplanes would require compliance with the part